CLAIMS

1. Hydrodynamic converter for the drive train of a motor vehicle, comprising a pump (2), a turbine (3) connected to the transmission input shaft (4), a stator (5), a primary clutch (PK) which connects the drive (6) detachably to the pump (pump impeller) (2), and a converter bridging clutch (WK) which connects the drive (6) detachably to the transmission input shaft (4), characterized in that the primary clutch (PK) and the converter bridging clutch (WK) can be activated by a common piston (8) via a common oil supply (9).

2. Hydrodynamic converter according to claim 1, characterized in that the common piston (8) is arranged so that on one side it is acted upon by the internal pressure of the converter and on the other side by the pressure built up in the piston space (12), so that depending on the ratio between the converter's internal pressure and the pressure in the piston space, the piston (8) can be moved in a particular direction, and depending on the said direction, in each case a clutch (PK, WK) can be actuated.

3. Hydrodynamic converter according to claims 1 or 2, characterized in that the primary clutch (PK) and the converter bridging clutch (WK) are arranged on the same side of the converter.

4. Hydrodynamic converter according to claims 1, 2 or 3, characterized in that the primary clutch (PK) and the converter bridging clutch (WK) are arranged on the engine side.

5. Hydrodynamic converter according to claims 1, 2, 3 or 4, characterized in that the primary clutch (PK) and the converter bridging clutch (WK) are positioned approximately one above the other or one next to the other.

6. Hydrodynamic converter according to any of the preceding claims, characterized in that the converter bridging clutch (WK) can be closed by the action of pressure and the primary clutch (PK) can be closed by the spring force of a spring (11) and can be opened by the action of pressure.

7. Hydrodynamic converter according to any of claims 1 to 5, characterized in that the converter bridging clutch (WK) and the primary clutch (PK) can be closed by the action of pressure.

8. Hydrodynamic converter according to any of claims 1 to 6, characterized in that the pump (2) is connected to the outer disk carrier of the primary clutch (PK), the inner disk carrier of the primary clutch (PK) is connected to a web (10) connected to the drive (6), the turbine (3) is connected to the inner disk carrier of the converter bridging clutch (WK) and the drive (6) is connected to the outer disk carrier of the converter bridging clutch (WK) via the web (10).

9. Hydrodynamic converter according to any of claims 1 to 6, characterized in that the pump (2) is connected to the inner disk carrier of the primary clutch (PK), the outer disk carrier of the primary clutch (PK) is connected to the drive (6), the turbine (3) is connected to the outer disk carrier of the converter bridging clutch (WK) and the drive (6) is connected to the inner disk carrier of the converter bridging clutch (WK) via a bolted-on disk (13).

10. Hydrodynamic converter according to any of claims 1 to 6, characterized in that the pump (2) is connected to the inner disk carrier of the primary clutch (PK), the outer disk carrier of the primary clutch (PK) is connected with the drive (6) via the converter shell, the turbine (3) is connected to the inner disk carrier of the converter bridging clutch (WK) and the drive (6) is connected to the outer disk carrier of the converter bridging clutch (WK) via a web (14).

11. Hydrodynamic converter according to claim 7, characterized in that the pump (2) is connected to the outer disk carrier of the primary clutch (PK), the inner disk carrier of the primary clutch (PK) is connected to the drive (6), the turbine (3) is connected to the outer disk carrier of the converter bridging clutch (WK), and the drive (6) is connected to the inner disk carrier of the converter bridging clutch (WK) via a bolted-on disk (13).

12. Hydrodynamic converter according to any of the preceding claims, characterized in that to control the clutches (PK) and (WK) a common valve unit is provided, which delivers or regulates a pressure between 0 bar and the system pressure, such that in the pressure range 0 bar to the converter pressure the

transmission ability of the primary clutch (PK) can be controlled or regulated, while the pressure range between the converter pressure and the system pressure the transmission ability of the converter bridging clutch (WK) can be controlled or regulated.

13. Method for controlling and/or regulating the primary clutch and the converter bridging clutch of a hydrodynamic converter, in particular a converter according to any of claims 1 to 12, characterized in that by means of a valve unit a pressure between zero bar and the system pressure is delivered or regulated, such that in the pressure range 0 bar to the converter pressure the transmission ability of the primary clutch (PK) can be controlled or regulated, while in the pressure range between the converter pressure and the system pressure the transmission ability of the converter bridging clutch (WK) can be controlled or regulated.

14. Method according to claim 13, characterized in that in the case when the primary clutch (PK) is made as a "negative" clutch and the converter bridging clutch (WK) is made as a "positive" clutch, when the converter's internal pressure is exceeded in the piston space (12) the converter bridging clutch is closed, while the primary clutch remains closed, and when the pressure falls below the converter's internal pressure the piston (8) is pressed against the force of the spring (11) and the primary clutch (PK) opens, while the converter bridging clutch (WK) is open, and when the pressure in the piston space (12) is about equal to the converter's internal pressure, the converter bridging clutch (WK) is open and the primary clutch (PK) is closed.

15. Method according to claim 13, characterized in that in the case when the primary clutch (PK) is made as a "positive" clutch and the converter bridging clutch (WK) is made as a "positive" clutch, when the pressure in the piston space (12) exceeds the converter's internal pressure the converter bridging clutch (WK) is closed while the primary clutch remains open, and when the pressure in the piston space (12) falls below the converter's internal pressure the primary clutch closes while the converter bridging clutch (WK) is open, and when

the pressure in the piston space (12) is about equal to the converter's internal pressure, the converter bridging clutch (WK) and the primary clutch (PK) are open.